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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/955,301	09/19/2001	Sung-lyong Lee	P56585	8147

7590 08/18/2004

Robert E. Bushnell  
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EXAMINER

LEE, CHRISTOPHER E

ART UNIT

PAPER NUMBER

2112

DATE MAILED: 08/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/955,301	<b>Applicant(s)</b> LEE ET AL.	
	<b>Examiner</b> Christopher E. Lee	<b>Art Unit</b> 2112	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 June 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3,5-13,15 and 16 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-3,5 and 6 is/are allowed.
- 6) ☒ Claim(s) 7-13,15 and 16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>5/18/04</u> | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Receipt Acknowledgement***

1. Receipt is acknowledged of the Amendment filed on 28<sup>th</sup> of June 2004. Claims 1-3, 5, 7-13 and 15 have been amended; claims 4 and 14 have been canceled; and claim 16 has been newly added since the Non-Final Office Action was mailed on 8<sup>th</sup> of April 2004. Currently, claims 1-3, 5-13, 15 and 16 are pending in this application.

### ***Claim Objections***

2. Claim 12 is objected to because of the following informalities: The claim 12 does not end with a period. See MPEP 608.01(m)[R-2] Form of Claims. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 12, 13 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claim 12 recites the limitation "the module rack" in line 2. There is insufficient antecedent basis for this limitation in the claim. Therefore, the term "the module rack" could be considered as --a module rack-- since it is not clearly defined in the claims. The claims 13 and 15 are dependent claims of the claim 12.

### ***Claim Rejections - 35 USC § 103***

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 7-11 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto et al. [US 5,621,659 A; hereinafter Matsumoto] in view of Drucker [US 5,591,984 A].

*Referring to claim 7*, Matsumoto discloses a method for connecting a plurality of function-extending modules (i.e., connecting operation devices, e.g., VTR 11 and MDP 21 in Fig. 16B; See Figs. 6A and 6B) to a base module (i.e., central control device, e.g., TV 1, especially Output Unit 8 in Fig. 16A) capable of reproducing audio/video (AV) data to be communicated, said method comprising the steps of: providing a switching unit (i.e., selector 4 of Fig. 16A); detecting whether said function-extending modules are installed (See col. 6, lines 43-48); and connecting said detected said function-extending modules to said base module (See col. 5, line 66 through col. 6, line 11, col. 13, lines 46-61 and col. 17, 10-26).

Matsumoto does not teach said function-extending modules are detachably inserted into a module rack; said switching unit having a first port connected to said base module, a plurality of common ports, one for each function-extending module, and a plurality of additional ports; connecting each common port of said switching unit to a first port of a respective one of said function-extending modules; connecting each additional port of said switching unit to a second port of a corresponding one of said function-extending modules; and detecting whether said function-extending modules are inserted into said module rack.

Drucker discloses a daisy-chain bypass arrangement (See Abstract and Fig. 1), wherein at least one function-extending module (i.e., modules 14-1 ... 14-N in Fig. 1) is detachably inserted into a module rack (i.e., detachably inserted into slots of backplane; See col. 2, lines 16-27); a switching unit (i.e., Gate 38-1 ... 38-N in Fig. 1) having a first port (i.e., source port coupled to signal trace 18 in Fig. 1) connected to a base module (i.e., source; See col. 2, lines 23-26), a plurality of common ports (i.e., Traces 30-1, ... 30-N in Fig. 1), one for each function-extending module (i.e., one for each module 14 in Fig. 1), and a plurality of additional ports (i.e., Traces 32-1, ... 32-N in Fig. 1); connecting each common port of said switching unit to a first port of a respective one of said function-extending modules (i.e., each Trace 30 being connected to Trace 24 of each module 14 in Fig. 1); connecting each additional port of said switching unit to a second port of a corresponding one of said function-extending modules (i.e., each

Trace 32 being connected to Trace 26 of each module 14 in Fig. 1); and detecting whether said at least one function-extending module is inserted into said module rack (See col. 3, lines 16-28).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have applied said daisy-chain bypass arrangement, as disclosed by Drucker, to said method, as disclosed by Matsumoto, so as to insert said at last one function-extending module into said module rack in order to connect said base module to said at last one function-extending module in said daisy-chain fashion, for the advantage of providing an arrangement for use in said apparatus (i.e., electronic system) which has said module rack (i.e., backplane) defining a plurality of slots each for demountably holding a respective one of at last one function-extending module (i.e., a plurality of plug-in modules; See Drucker, col. 1, lines 35-39).

*Referring to claim 8*, Drucker teaches checking for presence of a previously installed function-extending module (See col. 2, lines 50-57; i.e., sensing the current flow for checking if a slot is empty); and connecting said base module (i.e., source) to said at least one function-extending module (i.e., one of modules 14 in Fig. 1) when said previously installed function-extending module is not present (See col. 3, lines 10-15; i.e., bypassing an empty slot, and thus coupling the source to the module in the next slot).

*Referring to claim 9*, Drucker teaches checking for presence of a previously installed function-extending module (e.g., module 14-1 in Fig. 1; See col. 2, lines 50-57; i.e., sensing the current flow for checking if a slot is empty); and connecting said previously installed function-extending module to a newly installed function-extending module (e.g., module 14-2 in Fig. 1) and connecting said newly installed function-extending module to said base module (i.e., source) when only one previously installed function-extending module is present (i.e., the detected module 14-1 should be present for connecting said new module 14-2 to said source in Fig. 1).

*Referring to claim 10*, Drucker teaches checking for presence of previously installed function-extending modules (e.g., modules 14-1 ... 14-(N-1) in Fig. 1; See col. 2, lines 50-57; i.e., sensing the

current flow for checking if a slot is empty); and connecting a newly installed function-extending module (e.g., inserting module 20-N into slot 28-N in Fig. 1) to a function-extending module (e.g., module 20-(N-1) in Fig. 1) which constitutes a last node of a daisy chain of said previously installed function-extending modules (i.e., in case of last slot 28-N is empty in Fig. 1) when a number of said previously installed function-extending modules is at least two (in this example, the number of modules is N-1 in Fig. 1), and connecting said newly installed function-extending module (i.e., module 20-N of Fig. 1) to said base module (i.e., connecting the module 20-N to source via modules 14-1 ... 14-(N-1) in Fig. 1).

*Referring to claim 11*, Drucker teaches connecting said detected at lease one function-extending module (e.g., existing modules 14-1 ... 14-(N-1) in Fig. 1) to an installed function-extending module (e.g., newly inserted module 14-N into the empty slot 28-N in Fig. 1) in said daisy-chain fashion (See col. 2, lines 23-26).

*Referring to claim 16*, Matsumoto discloses a method for connecting a plurality of function-extending modules (i.e., connecting operation devices, e.g., VTR 11 and MDP 21 in Fig. 16B; See Figs. 6A and 6B) to a base module (i.e., central control device, e.g., TV 1, especially Output Unit 8 in Fig. 16A) capable of reproducing audio/video (AV) data to be communicated, said method comprising the steps of: (a) detecting whether said function-extending modules are installed (See col. 6, lines 43-48); and (b) connecting said detected said function-extending modules to said base module (See col. 5, line 66 through col. 6, line 11, col. 13, lines 46-61 and col. 17, 10-26).

Matsumoto does not teach said function-extending modules are detachably inserted into a module rack; a step of detecting whether said function-extending modules are inserted into said module rack; and said step (b) further comprises: (b21) checking for presence of a previously installed function-extending module; and (b22) connecting said previously installed function-extending module to a newly installed function-extending module and connecting said newly installed function-extending module to said base module when only one previously installed function-extending module is present.

Drucker discloses a daisy-chain bypass arrangement (See Abstract and Fig. 1), wherein a plurality of function-extending module (i.e., modules 14-1 ... 14-N in Fig. 1) are detachably inserted into a module rack (i.e., detachably inserted into slots of backplane; See col. 2, lines 16-27); a step of detecting whether said at least one function-extending module is inserted into said module rack (See col. 3, lines 16-28); and said step (b) further comprises: (b21) checking for presence of a previously installed function-extending module (e.g., module 14-1 in Fig. 1; See col. 2, lines 50-57; i.e., sensing the current flow for checking if a slot is empty); and (b22) connecting said previously installed function-extending module to a newly installed function-extending module (e.g., module 14-2 in Fig. 1) and connecting said newly installed function-extending module to said base module (i.e., source) when only one previously installed function-extending module is present (i.e., the detected module 14-1 should be present for connecting said new module 14-2 to said source in Fig. 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have applied said daisy-chain bypass arrangement, as disclosed by Drucker, to said method, as disclosed by Matsumoto, so as to insert said at last one function-extending module into said module rack in order to connect said base module to said at last one function-extending module in said daisy-chain fashion, for the advantage of providing an arrangement for use in said apparatus (i.e., electronic system) which has said module rack (i.e., backplane) defining a plurality of slots each for demountably holding a respective one of at last one function-extending module (i.e., a plurality of plug-in modules; See Drucker, col. 1, lines 35-39).

7. Claims 12, 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto [US 5,621,659 A] in view of Drucker [US 5,591,984 A] and what was well known in the art, as exemplified by Lach [US 6,363,452 B1].

*Referring to claims 12*, Matsumoto discloses a method for connecting a function-extending module (i.e., connecting operation device, e.g., VTR 11 or MDP 21 in Fig. 16B; See Figs. 6A and 6B) to



a base module (i.e., central control device, e.g., TV 1, especially Output Unit 8 in Fig. 16A) capable of reproducing audio/video (AV) data to be communicated, said method comprises detecting whether said function-extending module is installed (See col. 6, lines 43-48).

Matsumoto does not teach said function-extending module is detachably inserted into a module rack; and said method further comprising: detecting whether said function-extending module is inserted into said module rack; connecting said function-extending module to a previously installed function-extending module when said function-extending module is detected as being inserted into said module rack; wherein said connecting further comprising: confirming presence of said previously installed function-extending module to a newly-installed function-extending module when there is only one previously installed function-extending module, and connecting said newly installed function-extending module to said base module.

Drucker discloses a daisy-chain bypass arrangement (See Abstract and Fig. 1), wherein a function-extending module (i.e., modules 14-1 ... 14-N in Fig. 1) is detachably inserted into a module rack (i.e., detachably inserted into slots of backplane; See col. 2, lines 16-27); detecting whether said function-extending module (e.g., module 14-2 in Fig. 1) is inserted into said module rack (See col. 3, lines 16-28); connecting said function-extending module (i.e., module 14-2 in Fig. 1) to a previously installed function-extending module (e.g., module 14-1 in Fig. 1) when said function-extending module is detected as being inserted into said module rack (See col. 2, lines 50-57); wherein said connecting further comprising: confirming presence (i.e., sensing) of said previously installed function-extending module (See col. 2, lines 54-57; i.e., sensing the current flow for checking if a new module is inserted into slot) to a newly-installed function-extending module when there is only one previously installed function-extending module (i.e., the detected module 14-1 should be present for connecting said new module 14-2 to said source in Fig. 1), and connecting said newly installed function-extending module to a base module (i.e., connection relationship from module 14-2 to source via signal trace 18 in Fig. 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have applied said daisy-chain bypass arrangement, as disclosed by Drucker, to said method, as disclosed by Matsumoto, so as to insert said at last one function-extending module into said module rack in order to connect said base module to said at last one function-extending module in said daisy-chain fashion, for the advantage of providing an arrangement for use in said apparatus (i.e., electronic system) which has said module rack (i.e., backplane) defining a plurality of slots each for demountably holding a respective one of at last one function-extending module (i.e., a plurality of plug-in modules; See Drucker, col. 1, lines 35-39).

Matsumoto, as modified by Drucker, does not expressly teach a recording medium having program codes implementing said method in software.

The Examiner takes Official Notice that said method is achieved in all software implementation with the same or equivalent results, using appropriate program codes (i.e., processor instructions), which are stored in a recording medium (i.e., memory), is well known to one of ordinary skill in the art, as evidenced by Lach, at col. 12, lines 3-9.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have implemented said method, as disclosed by Matsumoto, as modified by Drucker, in software, so as to store said appropriate program codes (i.e., processor instructions) into said recording medium (i.e., memory) since it would allow a better flexibility of an implementation than said hardware implementation.

*Referring to claim 13*, Drucker teaches said second program comprises: a program code portion for checking for presence of a previously installed function-extending module (See col. 2, lines 50-57; i.e., sensing the current flow for checking if a slot is empty); and connecting said base module (i.e., source) to a newly installed function-extending module (e.g., module 14-1 in Fig. 1) when said previously

installed function-extending module is not present (See col. 3, lines 10-15; i.e., bypassing an empty slot, and thus coupling the source to the module in the next slot).

*Referring to claim 15*, Drucker teaches said second program comprises: a program code portion for connecting a newly installed function-extending module (e.g., inserting module 20-N into slot 28-N in Fig. 1) to a function-extending module (e.g., module 20-(N-1) in Fig. 1) that constitutes a last node of a daisy chain of said previously installed function-extending modules (i.e., in case of last slot 28-N is empty in Fig. 1) when a number of said previously installed function-extending modules is two (in this example, the number of modules is N-1 in Fig. 1; e.g., N=3), and connecting said newly installed function-extending module (i.e., module 20-N of Fig. 1) to said base module (i.e., connecting the module 20-N to source via modules 14-1 ... 14-(N-1) in Fig. 1).

#### ***Allowable Subject Matter***

8. Claims 1-3, 5 and 6 allowed.

9. The following is a statement of reasons for the indication of allowable subject matter:

The limitations of claim 1 are deemed allowable over the prior art of record as the prior art fails to teach or suggest that wherein said common port of said each switching device is connected to said second port of said given function-extending module, and said n-1 selection ports of said each switching device are connected to said first port of said n-1 other switching devices, respectively.

The claims 2, 3, 5 and 6 are dependent claims of the claim 1.

#### ***Response to Arguments***

10. Applicant's arguments, see page 15, line 8 through page 16, line 6, filed on 28<sup>th</sup> of June 2004, with respect to Claim 6 objection have been fully considered and are persuasive. The objection of Claim 6 has been withdrawn.

11. Applicant's arguments with respect to claims 7, 12 and 16 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Leinen [US 2003/0115396 A1] discloses reconfigurable IEEE 1149.1 bus interface.

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

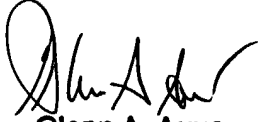
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher E. Lee whose telephone number is 703-305-5950. The examiner can normally be reached on 9:00am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark H. Rinehart can be reached on 703-305-4815. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christopher E. Lee  
Examiner  
Art Unit 2112

cel/ *CEL*

  
**Glenn A. Auve**  
**Primary Patent Examiner**  
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